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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
LIN, JAMES	

ART UNIT	PAPER NUMBER
1792	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/784,844	BERGH ET AL.	
	Examiner	Art Unit	
	Jimmy Lin	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-61* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-61* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/23/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 21-24 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The claims depend from claims 13-16, which depend from claims 5-8. Claims 5-8 already require all the limitations of claims 21-24.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-61 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "said vapor deposited phosphor" in lines 9-10. There is insufficient antecedent basis for this limitation in the claim. The only other phosphor mentioned in the claim does not require deposition via vapor deposition. For the purpose of this examination, "said vapor deposited phosphor" will be interpreted to be the photostimulable phosphor claimed in line 4.

Additionally, the claim is indefinite because it is unclear as to whether the phosphor can be deposited in any manner or is required to be vapor deposited.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-4, 9-12, 40-43, 45, 49-52, 54, and 58-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hell et al. (U.S. Publication No. 2001/0007352) in view of Takahashi (U.S. Publication No. 2001/0022349) and Tavernier et al. (U.S. Patent No. 5,620,825).

Hell discloses a method of making a binderless phosphor screen (abstract). An alkalide halide phosphor is deposited onto a substrate, wherein the phosphor is present as needle-like crystals [0015]. The needles have voids between them (Fig. 1).

Hell does not explicitly teach applying a solution of polymeric compounds selected from the group consisting of silazane and siloxane type polymeric compounds, mixtures thereof and mixtures of the silazane or siloxane type polymeric compounds with compatible polymeric compounds on the phosphor layer. Takahashi teaches that applying a protective layer on a phosphor layer of a phosphor screen prevents chemical deterioration or physical damage [0004]. Tavernier teaches that polysiloxane modified resins was a well known polymeric compound used as a protective layer in phosphor screens (col. 13, lines 16-20). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have deposited a polysiloxane compound on the phosphor layer of Hell with a reasonable expectation of success because Takahashi teaches the advantages of applying a protective layer and because Tavernier teaches that such a compound was operable in the art as a protective layer.

As to the limitation of "optionally wiping the excess of said solution from said phosphor layer", the step is optional and is not necessarily required in the claims.

Tavernier teaches that the polysiloxane is deposited as a solution and is then later dried to form a protective layer (col. 16, lines 39-54). Thus, the combination of Hell, Takahashi, and

Tavernier would reasonably suggest drying the phosphor screen in order to dry the protective layer.

Claim 2: Hell teaches that the phosphor can be CsBr:Eu. The phosphor is placed in a heatable crucible, which is set into a chamber evacuated to 4×10^{-5} mbar [0048]-[0049].

Claims 3-4: Hell teaches that the phosphor can be deposited by chemical vapor deposition [0038].

Claims 9-12: Tavernier teaches that the polysiloxane compound can include a colorant (col. 6, line 64-col. 7, line 15).

Claims 40-43,45: Hell, Takahashi, and Tavernier do not explicitly teach the results of the Taber abrasion test as claimed. However, the combination of references teaches and suggests the same compounds used in the same methods and, thus, they must necessarily achieve the same results as the claimed results.

Claims 49-52,54,58-61: Hell teaches that the phosphor screen comprises a binderless phosphor layer of needle-shaped CsBr:Eu crystals.

7. Claims 5-8, 13-24, 29-35, 44, 46, 48, 53, 55, and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hell '352 in view of Takahashi '349 and Tavernier '825 as applied to claim 1 above, and further in view of Kawabata et al. (U.S. Patent No. 4,947,046, cited in the IDS filed 2/23/2004).

Hell, Takahashi, and Tavernier are discussed above, but do not explicitly teach that an additional step of applying at least one colorant in the voids is performed before the step of applying a solution of the polymeric compound. However, Kawabata teaches that packing fine particles into the voids of the phosphor layer can strengthen the phosphor layer and completely prevent the transversal diffusion of stimulating excitation light that goes into the phosphor layer in the art of phosphor screens. The packing particles can have a coloring agent (col. 4, lines 21-51). The packing particles can also enhance the effect of the phosphor panel (col. 11, lines 1-13). The packing particles can be coated onto the phosphor layer as a solution (col. 5, lines 28-31). It would have been obvious to one of ordinary skill in the art at the time of invention to have applied a colored packing particle into the voids of Hell with a reasonable expectation of

success. One would have been motivated to do so in order to have achieved the advantages as taught by Kawabata.

Tavernier and Kawabata does not explicitly teach that the step of applying the colorant is performed before the step of applying the polysiloxane. However, the combination of Tavernier and Kawabata would reasonably suggest such order of steps because the colorant would not be able to be applied in the voids if the protective layer is formed first. Additionally, the selection of any order of performing process steps is *prima facie* obvious in the absence of new or unexpected results. See, for instance, *In re Burhans,* 154 F.2d 690, 69 USPQ 330 (CCPA 1946). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have performed the steps of applying the colorant and applying the polysiloxane in any order, including the order as claimed, with a reasonable expectation of success because one of ordinary skill in the art would not have anticipated any unexpected results in the order of steps.

Claims 29-35: Kawabata teaches that the voids can be less than 30 μm (col. 3, lines 48-52). Overlapping ranges are prima facie evidence of obviousness (see MPEP 2144.05.I.). It would have been obvious to one having ordinary skill in the art to have selected the portion of Kawabata's range of length that corresponds to the claimed range.

8. Claims 25, 27, 36, 38, 47, and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hell '352 in view of Takahashi '349 and Tavernier '825 as applied to claim 1 above, and further in view of Itabashi et al. (U.S. Patent No. 5,475,229, cited in the IDS filed 2/23/2004).

Hell, Takahashi, and Tavernier are discussed above. Tavernier teaches that the polysiloxane can be applied in a solution of methyl ethyl ketone, but does not explicitly teach that the solution of compatible polymeric compounds can be urethanes and urethaneacrylates in ketones. However, Itabashi teaches a method of making a phosphor screen (abstract), wherein the protective film solution can include a polyurethane resin (col. 9, lines 6-16). Because Itabashi teaches that adding such a compound to a protective film solution was operable, it would have been obvious to one of ordinary skill in the art at the time of invention to have added polyurethane resin to the polysiloxane solution of Tavernier with a reasonable expectation of

success. The combination of references reasonably suggests a solution of polysiloxane and polyurethane resin in a solvent of methyl ethyl ketone.

9. Claims 26, 28, 37, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hell '352 in view of Takahashi '349, Tavernier '825, and Kawabata '046 as applied to claim 5 above, and further in view of Itabashi '229 for substantially the same reasons as discussed immediately above.

Double Patenting

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. Claims 1 and 25 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 33, 52 and 58-59 of copending Application No. 10/784851. Although the conflicting claims are not identical, they are not patentably distinct from each other because present claim 1 is merely a combination of claims 33 and 58-59 of '851. Present claim 25 has additional limitation that is required in claim 52 of '851.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

12. Claims 2-24 and 26-61 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 33, 52 and 58-59 of copending Application No. 10/784851 in view of Hell '352 in view of Takahashi '349, Tavernier '825, Kawabata '046, and Itabashi '229 for substantially the same reasons as in the rejections discussed above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy Lin whose telephone number is (571)272-8902. The examiner can normally be reached on Monday thru Friday 8AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jimmy Lin/
Examiner, Art Unit 1792

/Timothy H Meeks/
Supervisory Patent Examiner, Art Unit 1792